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THE PLANT DISEASE REPORTER

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THE PLANT DISEASE SURVEY

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ANNUAL CEREAL DISEASE REPORT

The annual report on cereal diseases for 1927 has been requested of chief collaborators and forms with state maps and loss estimate blanks have been sent them. The report is due November 15. All other collaborators and readers of this Reporter are asked to cooperate with the chief collaborators of their states or with the Washington office in the preparation of these reports in an effort to make them as complete and reliable as possible. R. J. H.

NOTES ON LATE BLIGHT OF POTATO

Minnesota: I just returned from a survey trip through northeast Minnesota and found late blight tuber rot causing considerable loss in some localities. In parts of Pine, Carlton, and St. Louis Counties losses from rot are frequently around 25 and 30 per cent and occasionally as high as 50 per cent. The late blight area, from all reports, seems to be limited to the eastern tier of counties from the southern Pine County line to Lake County. Some unconfirmed reports of late blight have also been received from part of Itasca County. This is the third year that late blight has caused losses in this area in the past four years. Late blight was quite destructive in this same territory in 1924, 1926, and 1927. (R. C. Rose, Oct. 17)

Georgia: On October 17 and 18 I examined the fields of second crop potatoes around Cornelia, in the northern part of the state, including the Green Mountain and Lookout Mountain varieties. Digging was in progress. Although the vines had not yet been killed by frosts, nearly all of the fields of Green Mountains in low, damp areas had been killed completely for two to three weeks by late blight. The infection was less severe in higher and better ventilated fields. Very few fields showed little or no blight. None of the Lookout Mountain fields, even in low places, showed indications of the earlier infection. All Lookout seed was home-grown; all Green Mountain, Maine seed (certified). In the fields that were killed early, tuber rot was plentiful, and

the tubers greatly under size. Including under size of tubers and rots, the loss in that section will amount probably to 25 per cent from late blight alone. (O. C. Boyd, Oct. 24)

POTATO DISEASES IN KANSAS

The following report on the occurrence of potato diseases in Kansas is by O. H. Elmer (October 1).

"Rhizoctonia solani very common and very destructive this season. The season was cool and there was an excessive rainfall. The chief damage was in rotting off stems, roots, and stolons. Sclerotia do not normally form on the tubers in Kansas but this symptom was frequently noted during the past season. Numerous fields were noted where 50 per cent of the plants had large development of aerial tubers due to the necrosis of the stem below ground."

"Black leg (Bacillus phytophthorus) very severe in some fields and present generally. Dying plants noted throughout the season to harvesting time."

"A few plants found with Fusarium wilt. Not serious."

"Spindle tuber general and variable in amount depending on presence in seed. Caused a serious reduction in yield taken as a whole."

"Hopperburn was not at all serious."

OTHER REPORTS ON POTATO DISEASES

Early blight (Macrosporium solani) in Virginia "Very prevalent and unusually destructive on fall crop in this section this season. Spots on both Cobbler and Green Mountain very large and typically zirrate. Far more destructiv than during the last three years." (F. P. McWhorter, Norfolk)

Scab (Actinomyces scabies) in Iowa "Scab has been unusually prevalent and destructive this year. The season of 1927 supplied a combination of dry soil and favorable soil temperatures which made ideal conditions for the development of the disease." (W. A. Archer, Ames)

TOMATO LATE BLIGHT AND ANTHRACNOSE IN MAINE

The following interesting reports were received from Donald Folsom (October 25).

"Anthracnose (Glomerella cingulata) found on fruits in garden near old neglected apple trees. First report from Maine. Infection from cultures to apple are just beginning to show rot."

"Late blight (Phytophthora infestans) unusually conspicuous this year, in apparent correlation with the unusual severity of potato late blight. Nearly all of the fruits affected on our experimental farm in Aroostook County."

TOMATO MOSAIC

Massachusetts: This disease appeared earlier than common and most of the diseased plants succumbed to the disease, very early - September 1. In the gardens loss of plants slightly less than one-third. (W. H. Davis, Oct. 1)

Virginia: The most destructive mosaic of tomato the writer has seen in this state developed in late sown June Pinks in the vicinity of Diamond Springs. Affected plants were severely stunted, and mottling, crinkle, and curl symptoms were marked. Ordinarily mosaic on tomatoes in this section reduces the yield but does not materially stunt the plants.

The disease was moderately severe and prevalent on Stone and Globe varieties in the Northern Neck this season. (McWhorter)

Wisconsin: Found in a few Milwaukee County greenhouses. More serious than streak. (Vaughan, Oct. 15)

Kansas: Very common. (O. H. Elmer, Oct. 12)

OTHER REPORTS ON TOMATO DISEASES

Eastern Virginia: This is an early blight year in all the solanaceous crops. Septoria leaf spot has been crowded out by the abundance of typical early blight. This has been true throughout the season. Fruit drop was common in the Northern Neck section during the early summer. It is now prevalent and severe in the Williamsburg portion of the Tidewater section. It is especially severe in those areas where early blight of potato is now abundant. Both forms

of the drop are present, namely, that due to the destruction of the peduncle and that due to the separation of the fruit from the calyx. The former predominates.

There was about twice as much **Fusarium wilt** in the Northern Neck section as there was in 1926. The farmers are thoroughly alarmed. Marglobe was more resistant than Stone or Radebaugh's Special but was not entirely resistant. It was more abundant than in 1926 in the Tidewater Section. In the region near Williamsburg, Marglobe proved resistant. (McWhorter)

Kansas: Septoria leaf spot of tomatoes has been unusually serious in Kansas during the past season. Defoliation of the plants was serious by August 1 and the disease caused a marked shortening of the bearing season. The disease was found serious in the cold frames as early as June 15.

Western yellow blight found on Experiment Station plots. Similar to symptoms seen in 1924 and 1925 on tomatoes in Iowa. (O. H. Elmer, Oct. 12)

DISEASES OF SWEET POTATOES

"Black rot (Sphaeronema fimbriatum (Ell. & Hals.) Sacc. There is much more of this disease evident in the field in the Norfolk section of Virginia than was in 1926 or 1925. The growers seem to be getting careless. Storage rot is to be expected." (McWhorter). "General in Kansas." (O. H. Elmer, Oct. 12)

"Stem rot (Fusarium spp.) is general but not serious this year in Kansas. Cool moist summer." (O. H. Elmer, Oct. 12)

"Soil pox (undet.) is common in Kansas." (O. H. Elmer, Oct. 12)

MOSAIC OF BELL PEPPERS

Eastern Virginia: A typical but not destructive mosaic has developed on bell peppers in the vicinity of Diamond Springs. It is suggestive of common leaf mottle mosaic of tomatoes. (McWhorter; Sept.)

DISEASES OF CUCURBITS IN EASTERN VIRGINIA

The occurrence of downy mildew and bacterial wilt in eastern Virginia during July and August are reported by F. P. McWhorter of the Virginia Truck Experiment Station at Norfolk:

> "The downy mildew was of unusual severity this season. It was by far the most important of the cucurbit diseases. Wilt was second in importance.
>
> "Bacterial wilt abundant on cantaloupe and occasional on watermelon. One field near Hampton was observed where more than 50 per cent of the plants died from this disease. The average for the section would approximate 5 per cent on cantaloupe and 2 per cent on watermelon. Our entomologist reports striped beetles to have been more abundant this season than last; this of course accounts for the increase in wilt."

OTHER REPORTS ON DISEASES OF VEGETABLE CROPS

Eggplant: Early blight, Macrosporium (solani ?). "During the late summer a minor infection of Macrosporium leaf spot has developed in widely separated sections of Tidewater Virginia." (McWhorter, Oct.)

Celery diseases in Massachusetts: "The worst infection of Cercospora blight I ever saw. Some plants are entirely destroyed. Especially severe at this time. The smallest number of plants infected with Septoria blight that I have ever seen in the past five years." (W. H. Davis, Oct. 13.)

Lettuce: Septoria lactucae "Observed in the Richmond trucking section of Virginia. As yet not so destructive as in the Norfolk section in the fall and spring." (McWhorter, Oct. 5.)

Okra: Drop, Sclerotinia sclerotiorum in Massachusetts. "Pods which touch the ground are rotted in one week. The organism is within the stems which have cracked, split, and lodge on the ground. In these cracks sclerotia form, sometimes 6 to 8 inches above the soil line." (W. H. Davis, Oct. 1).

Dill: Stem and leaf spot, Phoma anethi. "Heavy infection noted in a garden in Linn County, Iowa, Sept. 23." (Archer)

DISEASES OF CORN

Leaf rust (Puccinia sorghi). "Prevalent on both field and sweet corn in Kansas this year. Wet weather during most of the summer seems to have favored an unusually heavy infection of this disease." (C. O. Johnston.)

Brown spot (Physoderma zeae-maydis). "A moderate amount is present on corn in the vicinity of Manhattan. No damage seems to have been done by this disease." (C. O. Johnston, Kansas).

Root rot in Iowa. "On an average, about 1 per cent of the plants are affected, although in some fields in northern counties as high as 30 per cent of the plants were lodged. An examination reveals a discolored crown and rotted roots; in practically all cases the primary injury was traceable to root worm work." (W. A. Archer, Oct. 15)

SORGHUM DISEASES IN KANSAS

The following notes are by C. O. Johnston:

"Head smut (Sorosporium reilianum) not abundant but was present in small amounts in certain varieties. The western half of the state had the larger amount of head smut. The disease was found in moderate amounts in promising Blackhull Kafir x Sourless hybrids at Manhattan. Head smut usually does not occur at Manhattan. (Oct. 1.)

"An undetermined bacterial disease was found killing Milo plants in plots at the Garden City Substation by J. H. Martin, H. N. Vinall and J. H. Parker. Diseased plants were dwarfed and badly discolored and often rotted at the crown. The discolored vascular system is very noticeable. Other varieties of sorghum do not seem to be attacked. (Oct. 1.)

"Stripe (Bacterium andropogoni) very common, especially on certain varieties, in Kansas. At Manhattan Feterita and Kansas Orange seemed to be heavily attacked. Hybrids of these two varieties were also very susceptible. Milos and Kafirs were either free from the disease or lightly attacked. (Oct. 1.)

"Rust (Puccinia purpurea), general in Kansas this year. This disease is very unusual here at Manhattan. Feterita seems to be especially susceptible although all varieties have some rust. The lower leaves of many rows of Feterita and hybrids into which that variety entered as a parent, have been killed by the disease."(Oct. 13.)

BACTERIAL WILT OF ALFALFA SEVERE IN IOWA

"A recent trip through the southwestern portion of the state reveals wilt to be much more common than was observed early in the spring. Practically all fields over two years old are affected, most of them severely. Dakota No. 12 has been planted extensively and in a number of fields, where it was possible to secure accurate data, this variety was severely attacked." (W. A. Archer, Oct. 30.)

CRANBERRY FALSE BLOSSOM IN MASSACHUSETTS

N. E. Stevens of the Bureau of Plant Industry reports an increase in the amount of false blossom in Massachusetts.

> "The outstanding development of the past season in cranberry disease work has been the continued and almost startling increase in the amount of false blossom in Massachusetts. It is very difficult to measure such an increase accurately, but it is certainly within the facts to say that the amount of false blossom in Plymouth County, has increased at least ten times within the last three years. (Oct. 8.)

SOME REPORTS ON FRUIT TREE DISEASES

Following are some reports sent by O. H. Elmer on fruit tree diseases in Kansas:

> "Apple blotch (Phyllosticta solitaria) very serious on susceptible varieties. Petiole infection of over 50 per cent of the leaves noted on numerous trees. Both the netted and sunken type of cankers very plentiful on fruit of susceptible trees when unsprayed." (Oct. 12.)

> "Pear leafspot (Mycosphaerella sentina) local but very serious on certain varieties. Duchess trees so severely defoliated that a second new growth of leaves and stems started in the late summer - shoots grew as long as 9 inches by last of September." (Oct. 12.)

> "Cherry leafspot (Coccomyces hiemalis) cherry trees in the state were practically defoliated by this fungus. In the Kaw Valley many trees had scarcely a leaf remaining previous to the time the fruit was ripe. Throughout the western half of Kansas the only cherry trees with leaves are those that were sprayed. An interesting observation was the effectiveness of the three application Bordeaux spray schedule in controlling the leaf spot disease even under this year's serious epidemic. The 1928 fruit buds on defoliated trees are very poorly developed indicating at the most only a poor crop in 1928." (Oct. 12.)

CHESTNUT BLIGHT IN IOWA

The occurrence of chestnut blight (Endothia parasitica) in Iowa

is reported by W. A. Archer as follows (Oct. 30):

"In a nursery in the northern part of the state three medium sized trees of Castanea dentata were killed back to the roots by the blight. In the same nursery there had been planted several trees developed as blight resistant by Sorden in Pennsylvania. All these trees were killed several years ago, presumably by winter injury. Seedlings of these trees now show an occasional cankered limb. Only one canker, however, showed typical pycnidia and spores of Endothia parasitica; the other cankers contained fruit bodies of a species of Fusicoccum which may be the same as the organism reported from California."

ANTHRACNOSE OF BLACK WALNUT

"Anthracnose of walnut (Gnomonia leptostyla) occurs generally throughout Iowa and has caused severe defoliation of both young and mature trees in many sections." (Archer, Oct. 15.)

BLISTER CANKER ON AMELANCHIER IN IOWA

"Blister canker (Nummularia discreta) has been known to occur in the state for a number of years, but it has not been reported previously to the Survey." (Archer, Oct. 15.)

SOME DISEASES OF ORNAMENTALS AND MISCELLANEOUS HOSTS

Chrysanthemum: Septoria chrysanthemella in eastern Virginia. "Frequent Bordeaux dusting has been found necessary to prevent defoliation of most varieties this season." (McWhorter, Sept.)

Cosmos: Phomopsis stewartii in Kansas. "Reported from Linn County and specimens received." (Elmer, Oct. 12.)

Snapdragon: Puccinia antirrhini in Kansas: "Very severe in certain gardens where plants were practically defoliated." (Elmer, Oct. 12.)

Petunia: Mosaic. "Very common in Kansas." (Elmer, Oct. 12.)

Hardy phlox: Septoria divaricata in eastern Virginia. "Our commonest and most serious disease of hardy phlox." (McWhorter).

Daisy fleabane (Erigeron annuus): Aster yellows. "Daisy fleabane plants with yellows were noted in northeastern, eastern, and central part of Kansas. In one field grown to weeds approximately 50

per cent of the E. annuus plants were affected in a population of hundreds." (Elmer, Oct. 12.)

SOME SPECIMENS RECEIVED

Following is a list of some of the specimens that have been received recently:

Bacterium lachrymans on cucumber: Utah, Piute Co., M. B. Linford, Aug. 30. Virginia, Princess Anne Co., F. P. McWhorter, July 28.

Septomyxa affine on turnip: Alabama, Birmingham, L. W. Brannon, Sept., det. W. A. Whitney.

Alternaria brassicae on horseradish: Utah, Carbon Co., M. B. Linford, Aug. 19.

Ramularia armoraciae on horseradish: Utah, Cache Co., M. B. Linford, Sept.

Puccinia purpurea on Feterita: Kansas, Manhattan, Riley Co., C. O. Johnston, Oct. 13.

Cercospora zebrina on Trifolium repens: Utah, Uintah Co., M. B. Linford, Aug. 11.

Pestalozzia monochaeta on chestnut and oak: Tennessee, Crossville, C. D. Sherbakoff, Sept. 4.

Cylindrosporium chrysanthemi on chrysanthemum: New York, Larchmont, Bassi Freres, Inc., Aug. 23, det. Freeman Weiss.

Coleosporium solidaginis on China aster: Virginia, Mathews Co., F. P. McWhorter, Aug.

Didymaria clematidis on Clematis ligusticifolia: Utah, Duchesne Co., M. B. Linford, Aug. 11.

Cercospora squalidula on Clematis ligusticifolia: Utah, Duchesne Co., M. B. Linford, Aug. 11.

Cylindrosporium shepherdiae on Shepherdia argentea: Utah, Uintah Co., M. B. Linford, Aug. 9.

Exosporium concentricum on Euonymus japonicus: Texas, McLennan Co., B. F. Dana, Oct. 7, det. W. W. Diehl.

Ovularia pulchella on Agrostis sp.: Utah, Uintah Co., M. B. Linford, Aug.

Puccinia poarum on Poa pratensis: Utah, Cache Co., M. B. Linford, Sept.

Entyloma lineatum on Zizania aquatica: Connecticut, New Haven Co., G. P. Clinton and G. L. Zundel, Sept. 23.

Protomyces pachydermus on Taraxacum officinale: Utah, Weber Co.,M. B. Linford, June 24, det. J. J. Davis.

Puccinia pimpenellae I on Osmorrhiza longistylis: Maryland near Washington, D. C., Mary G. Van Meter, Mar. 27, det. H. S. Jackson.

Puccinia claytoniata on Claytonia virginica: Maryland near Washington, D. C., Mary G. Van Meter, Mar. 27, det. H. S. Jackson.

Sphacelotheca hydropiperis on Polygonum sagittatum: Connecticut, Hartford Co., G. L. Zundel, Oct. 20.